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EXAMINER

LAO, LUN S

ART UNIT

PAPER NUMBER

2644

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/708,394

Applicant(s)

KOYANAGI, YUKIO

Examiner

Lun-See Lao

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. This action is in responds to the amendment filed on 09-15-2005. Claims 1, 7, and 14 have been amended and claim 15 has been canceled. Claims 1-14 are pending.

Continued Prosecution Application

2. The request filed on 09-15-2005 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 10/708,394 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Objections

3. Claim 7 is objected to because of the following informalities: Claim 7 recites "An FIR filter device" on line 1, which appears to be—A FIR filter device--. Appropriate correction is required.

4. Claim 14 is objected to because of the following informalities: Claim 7 recites "An FIR filter designing method" on line 1, which appears to be—A FIR filter designing method--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. Claims 1, 4-7 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers (US PAT. 4,817,149) in view of Wilkinson (JP 06-326555).

Consider 1 and 7 Myers teaches a filter device, comprising:

a first FIR filter (see fig.7, f1) for multiplying a signal of each tap of a tapped delay line (see fig. 20) by several times according to given first filter factors and then performing addition and output, the delay line being made up of a plurality of delay units; and

a second FIR filter (FIG.7, F2) for multiplying a signal of each tap (FIG.20) of a tapped delay line by several times according to given second filter factors and then performing addition and output, the delay line being made up of a plurality of delay units; and an output coupled to both a first output (see fig. 7 (when the switch 101 connected to F1, F1 is processing data output)) of the first FIR filter (F1) and second output (when the switch 101 connected to F1, F2 is processing zero data output) of the second FIR filter (F2 and see col.8 lines 24-58), wherein the first filter factors have a symmetrical sequence in which values are set so that a sum is not zero (see col.8 lines 24-58 and col.13 line 35-col. 14 line 68), a sum of every other term is equal to a sum of the other every other term with the same signs (see figs. 1, 7, 20 and col. 13 line 35-col. 14 line 68); and the second filter factors have a symmetrical sequence in which values are set so that a sum is zero (see fig.7 f2, when the switch 110 connects to f1); but Myers does not clearly teach a sum of every other term is equal to a sum of the other every other term with opposite signs.

However, Wilkinson teaches a sum of every other term is equal to a sum of the other every other terms with the same signs (the first filter factor is composed of the ratios of -1, 0, 9,16, 9, 0, -1); and the second filter factors have a symmetrical sequence in which values are set so that a sum is zero and a sum of every other term is equal to a sum of

Art Unit: 2644

the other every other terms with opposite signs (the second filter factor is composed of the ratios of 1,0, -9,16,-9,0,1 and see figs 5, 7 and col.5 lines 1-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wilkinson into Myers to provide a half-band filter in respective low and high-band passing parts, placing the filters in an opposite stage and supplying the required symmetry.

Consider claim 12 Myers teaches a sound quality adjusting method, comprising:
a first filtering step, implemented by a first FIR filter (see fig.7, F1 and col. 8 lines 24-58), of multiplying a signal of each tap (see fig. 20), which delays an input sound signal, by several times by using first filter factors and then performing addition and output, the first filter factors having a symmetrical sequence in which values are set so that a sum is not zero and a sum of every other terms is equal to a sum of the other every other term with the same signs;(see col.8 line 24-58 and col. 13 line 35-col. 14 line 68), and
a second filtering step, implemented by a second FIR filter (see fig.7, F2 and col. 8 lines 24-58), of multiplying a signal of each tap of a tapped delay line (see fig. 20), which delays an input sound signal, by several times by using second filter factors and then performing addition and output, the second filter factors having a symmetrical sequence are set so that a sum is zero (see fig.7 f2, when the switch 110 connects to f1)(see figs. 1,7,20 and col.8 line 24-58 and col. 13 line 35-col. 14 line 68);and
a gain controlling step (see fig.1, (200) and see col. 6 line 23-col. 7 line 47) of controlling a gain of a sound signal having passed through the first FIR filter (see fig.7, f1) and a gain of a sound signal having passed through the second FIR filter (see fig.7,

Art Unit: 2644

f2); and a summing step (see fig.1, 168 and col.6 lines 23-62 and col. 14 line 27-col. 15 58) of summing (see fig.7, the point connected between F1 and F2) the sound signals having undergone gain control in the gain controlling step and outputting a sum (by the joining point between F1 and F2, see fig.7 and, see col.8 line 23-col. 9 line 63); but Myers does not clearly teach a sum in which values of every other term is equal to a sum of the other every other term with opposite signs.

However, Wilkinson teaches a sum of every other term is equal to a sum of the other every other terms with the same signs (the first filter factor is composed of the ratios of -1, 0, 9,16, 9, 0, -1); and the second filter factors have a symmetrical sequence in which values are set so that a sum is zero and a sum of every other term is equal to a sum of the other every other term with opposite signs (the second filter factor is composed of the ratios of 1,0, -9,16, -9, 0, 1 and see figs 5, 7 and col.5 lines 1-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wilkinson into Myers to provide a half-band filter in respective low and high-band passing parts, placing the filters in an opposite stage and supplying the required symmetry.

Consider claims 4,10,13 and 11, Wilkinson teaches that the sound quality adjusting device of the sequence of the first filter factors is composed of ratios of -1, 0, 9, 16, 9, 0, and -1 and the sequence of the second filter factors is composed of ratios of 1, 0, -9, 16, -9, 0, and 1 (see fig.7 and page 5 lines 1-15) and the sound quality adjusting device at least one of the first filter and the second filter is cascaded to a subsequent stage of at least one of the first filter and the second filter (see fig.2 and page 1 lines 33-38).

Consider claim 5 Myers teaches that the sound quality adjusting device (see fig.1) of the first FIR filter and the second FIR filter (see fig.7, f1, f2 and see col.8 line 24-58); but Mayers does not teaches that at least one of the first FIR filter and the second FIR filter is cascaded to a subsequent stage comprising a filter duplicating at least one of the first FIR filter and the second FIR filter.

However, Wilkinson teaches that at least one of the first FIR filter (a symmetrical FIR filter such as a pair of the low-pass filter and the high-pass filter (see specification [0129])) and the second FIR filter (a symmetrical FIR filter such as a pair of the low-pass filter and the high-pass filter (see specification [0129])) is cascaded to a subsequent stage comprising a filter duplicating at least one of the first FIR filter and the second FIR filter (see detailed page 1 [0004]-page 2 [0009]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wilkinson into Myers to provide a half-band filter in respective low and high-band passing parts, placing the filters in an opposite stage and supplying the required symmetry.

Consider claim 6 Myers teaches that the sound quality adjusting device (see fig.1) of the first FIR filter and the second FIR filter (see fig.7, f1, f2 and col. 8 line 24-58) and the control is performed on a gain (see fig.1, 200) of an output signal from each of the cascaded FIR filters (see fig.7, f1, f2) in the subsequent stage, and sound signals having been subjected to gain control are summed and outputted (see fig. 1 and see col. 6 line 23-col. 7 line 47), but Myers does not clearly teach that the first FIR filter and the second FIR filter is cascade in parallel to a subsequent stage comprising first FIR

filter, the first FIR filter and second FIR filter being cascaded in the parallel to a subsequent stage of the second FIR filter.

However, Wilkinson teaches that the first FIR filter (a symmetrical FIR filter such as a pair of the low-pass filter and the high-pass filter (see specification [0129])) and the second FIR filter (a symmetrical FIR filter such as a pair of the low-pass filter and the high-pass filter (see specification [0129])) is cascade (see fig. 2) in parallel to a subsequent stage comprising first FIR filter, the first FIR filter and second FIR filter being cascaded in the parallel to a subsequent stage of the second FIR filter (see detailed page 1 [0004]-page 2 [0009]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wilkinson into Myers to provide a half-band filter in respective low and high-band passing parts, placing the filters in an opposite stage and supplying the required symmetry.

Consider claim 14, Myers teaches that an FIR filter designing method for designing FIR digital filters, the method comprising:

setting frequency characteristics (see figs. 8-12) to be complementary to each other and allowing a total gain of the FIR digital filters to serve as a reference value at all frequencies (see figs. 1 and 20 and col. 6 line 23-col. 7 line 48);

establishing first filter (see fig. 7 F1) coefficients (see fig. 20) having a first symmetrical sequence in which a sum of the first filter coefficients is not zero (see col. 8 line 25-58) and a sum of every other coefficient in the first symmetrical sequence is

Art Unit: 2644

equal to a sum of every other coefficient having a same sign (see fig.20 and col. 13 line 35-col. 14 line 68);

changing (see fig. 7 (by 101 switch)) the sequence of the first filter (F1) coefficients and determining second filter (F2) coefficients having a second symmetrical sequence in which a sum of the second filter (F2) coefficients is zero (when the switch 101 connected to F1), wherein the first filter (F1) coefficients and the second filter (F2) coefficients are used, respectively, as the filter factors of first and second FIR digital filters F1 and F2) whose outputs are summed (the point connected between F1 and F2, (when the switch 101 connected to F1, F1 is processing data output and F2 is processing zero data output) and see fig.7) together (see col. 8 line 24-col. 9 line 63); but Myers does not clearly teach that a sum of every other coefficient in the second symmetrical sequence is equal to a sum of the other every other coefficient having an opposite sign.

However, Wilkinson teaches a sum of every other coefficient in the first symmetrical sequence is equal to a sum of the other every other coefficient having a same signs (the first filter factor is composed of the ratios of -1, 0, 9,16, 9, 0, -1); and determining second filter coefficients having a second symmetrical sequence in which a sum of the second filter coefficients is zero and a sum of every other coefficient in the second symmetrical sequence is equal to a sum of the other every other coefficient having an opposite sign (the second filter factor is composed of the ratios of 1,0, -9,16, -9, 0, 1 and see figs 5, 7 and col.5 lines 1-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wilkinson into Myers to provide a half-band filter in respective low and high-band passing parts, placing the filters in an opposite stage and supplying the required symmetry.

6. Claims 2-3 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers (US PAT. 4,817,149) as modified by Wilkinson (JP 06-326555) as applied to claims 1 and 7 above, and further in view of Kovtun (US PAT. 6,512,944)

Consider claims 2, 8 and 3,9, Wilkinson teaches the sound quality adjusting device of the second filter factors, signs of values other than a median of the sequence of the first filter factors are changed while causing values of the sequence to remain the same (see fig. 7 and detailed description page 4 [0022]- page5 [0020]); and the sound quality adjusting device of the second filter factors, signs of values other than a median of the sequence of the first filter factors are changed while causing values of the sequence to remain the same (see fig. 7 and detailed description page 4 [0022]- page5 [0020]); but Wilkinson does not clearly teach the causing absolute values of the sequence to remain the same; and the median of the sequence is subtracted from a reference value.

However, Kovtun teaches the causing absolute values (see scale factor formula col.5, line 1-15) of the sequence to remain the same, and the median of the sequence is subtracted (fig.2, 34) from a reference value (see figs1-6 col. 4 line 14-col. 5 line 51)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kovtun into the teaching of

Art Unit: 2644

Wilkinson and Myers to provide an improved, low-pass filter capable of removing noise signal component from higher frequency signal.

7. Claims 2-3 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers (US PAT. 4,817,149) as modified by Wilkinson (JP 06-326555) as applied to claims 1 and 7 above, and further in view of Honma (US PAT. 6,512,944).

Consider claims 2, 8 and 3,9, Wilkinson teaches the sound quality adjusting device of the second filter factors, signs of values other than a median of the sequence of the first filter factors are changed while causing values of the sequence to remain the same (see fig. 7 and detailed description page 4 [0022]- page5 [0020]); and the sound quality adjusting device of the second filter factors, signs of values other than a median of the sequence of the first filter factors are changed while causing values of the sequence to remain the same (see fig. 7 and detailed description page 4 [0022]- page5 [0020]); Wilkinson does not clearly teach the causing absolute values of the sequence to remain the same; and the median of the sequence is subtracted from a reference value.

However, Honma teaches the causing absolute values of the sequence to remain the same (by the controller 14, and see fig. 1); and the median of the sequence is subtracted from a reference value (see fig.1 and col.6 line 61-col.8 line10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Honma into the teaching of Wilkinson and Myers to provide an amplitude of a digital signal output is converged

quickly and securely to a predetermined value, thereby obtaining a reception output with a multipath component eliminated therefrom.

Response to Arguments

8. Applicant's arguments filed 09-15-2005 have been fully considered but they are not persuasive.

Applicant argued that the applied art, taken alone or in combination, does not teach or suggest a sound quality adjusting device for causing an input sound signal to pass through a plurality of FIR digital filter, controlling gains of output signals from the plurality of FIR digital filters, summing sound signals having been subjected to gain control, and outputting a sum, which includes. among other features, ". ..an output coupled to both a first output of the first FIR filter and a second output of the second FIR filter...", as recited in dependent claim 1, as amended (see remarks, page 9 second paragraph). The examiner disagrees. Myers teaches a first FIR filter (see fig.7, f1) for multiplying a signal of each tap of a tapped delay line (see fig. 20) by several times according to given first filter factors and then performing addition and output, the delay line being made up of a plurality of delay units; and a second FIR filter (FIG.7, F2) for multiplying a signal of each tap (FIG.20) of a tapped delay line by several times according to given second filter factors and then performing addition and output, the delay line being made up of a plurality of delay units; and an output coupled to both a first output (see fig. 7 (when the switch 101 connected to F1, F1 is processing data output)) of the first FIR filter (F1) and second output (when the switch 101 connected to

Art Unit: 2644

F1, F2 is processing zero data output) of the second FIR filter (F2 and see col.8 lines 24-58), wherein the first filter factors have a symmetrical sequence in which values are set so that a sum is not zero (see col.8 lines 24-58 and col.13 line 35-col. 14 line 68), a sum of every other term is equal to a sum of the other every other term with the same signs (see figs. 1, 7, 20 and col. 13 line 35-col. 14 line 68); and the second filter factors have a symmetrical sequence in which values are set so that a sum is zero (see fig.7 f2, when the switch 110 connects to f1), it meets the limitation as recited in claims 1 and 7.

Applicant further argued that the applied art taken alone or in combination, does not teach or suggest a sound quality adjusting method which includes among other features, "...a gain controlling step of controlling a gain of a sound signal having passed through the first FIR filter and a gain of a sound signal having passed through the second FIR filter; and a summing step of summing the sound signal having undergone gain control in the gain controlling step and outputting a sum", as recited in unamended independent claim 12(see remarks, page 9 second paragraph).

The examiner disagrees. Myers teaches a sound quality adjusting method, comprising: a first filtering step, implemented by a first FIR filter (see fig.7, F1 and col. 8 lines 24-58), of multiplying a signal of each tap (see fig. 20), which delays an input sound signal, by several times by using first filter factors and then performing addition and output, the first filter factors having a symmetrical sequence in which values are set so that a sum is not zero and a sum of every other terms is equal to a sum of the other every other term with the same signs;(see col.8 line 24-58 and col. 13 line 35-col. 14 line 68), and a second filtering step, implemented by a second FIR filter (see fig.7, F2

Art Unit: 2644

and col. 8 lines 24-58), of multiplying a signal of each tap of a tapped delay line (see fig. 20), which delays an input sound signal, by several times by using second filter factors and then performing addition and output, the second filter factors having a symmetrical sequence are set so that a sum is zero (see fig.7 f2, when the switch 110 connects to f1)(see figs. 1,7,20 and col.8 line 24-58 and col. 13 line 35-col. 14 line 68);and a gain controlling step (see fig.1, (200) and see col. 6 line 23-col. 7 line 47) of controlling a gain of a sound signal having passed through the first FIR filter (see fig.7, f1) and a gain of a sound signal having passed through the second FIR filter (see fig.7, f2); and a summing step (see fig.1, 168 and col.6 lines 23-62 and col. 14 line 27-col. 15 58) of summing (see fig.7, the point connected between F1 and F2) the sound signals having undergone gain control in the gain controlling step and outputting a sum (by the joining point between F1 and F2, see fig.7 and, see col.8 line 23-col. 9 line 63). It meets the limitation of the claim 12.

Applicant argued that the applied art, taken alone or in combination, does not teach or suggest an FIR filter designing method for designing FIR digital filters, which includes, among other features " ..establishing first filter coefficients having a first symmetrical sequence, ..changing the sequence of the first filter coefficients and determining second filter coefficients having a second symmetrical sequence. . .wherein the first filter coefficient and the second filter coefficients are used, respectively, as the filter factors of first and second FIR digital filters whose outputs are summed together", as recited in independent claim 14. as amended (see remarks, page 10, first paragraph).

The examiner disagrees. Myers teaches an FIR filter designing method for designing FIR digital filters, the method comprising: setting frequency characteristics (see figs. 8-12) to be complementary to each other and allowing a total gain of the FIR digital filters to serve as a reference value at all frequencies (see figs. 1 and 20 and col. 6 line 23-col. 7 line 48); establishing first filter (see fig. 7 F1) coefficients (see fig. 20) having a first symmetrical sequence in which a sum of the first filter coefficients is not zero (see col. 8 line 25-58) and a sum of every other coefficient in the first symmetrical sequence is equal to a sum of every other coefficient having a same sign (see fig. 20 and col. 13 line 35-col. 14 line 68); changing (see fig. 7 (by 101 switch)) the sequence of the first filter (F1) coefficients and determining second filter (F2) coefficients having a second symmetrical sequence in which a sum of the second filter (F2) coefficients is zero (when the switch 101 connected to F1), wherein the first filter (F1) coefficients and the second filter (F2) coefficients are used, respectively, as the filter factors of first and second FIR digital filters (F1 and F2) whose outputs are summed (the point connected between F1 and F2, (when the switch 101 connected to F1, F1 is processing data output and F2 may be processing zero data output) and see fig. 7) together (see col. 8 line 24-col. 9 line 63). It meets the limitation of claim 14, as recited.

Applicant further argued that Myers only uses one FIR filter output from either F1 or F2, and not both at the same time, given the switching control logic exerted in Myers by electronic switch 101 and audio position control computer 200 (see remarks, page 10, second paragraph). The examiner responds that the argument is not claimed, and thus moot.

Applicant argued that "sum of every other terms is equal to a sum of the other every other terms with same signs...", Wilkerson does not make up for the above-identified deficiency of Myers with respect to each of independent claims 1, 7, 12, and 14 (see remarks, page 10, third paragraph).

The examiner disagrees. Wilkinson teaches a sum of every other term is equal to a sum of the other every other terms with the same signs (the first filter factor is composed of the ratios of -1, 0, 9,16, 9, 0, -1 and such as, $(-1+9+9+(-1))=16$, $0+16+0=16$); and the second filter factors have a symmetrical sequence in which values are set so that a sum is zero and a sum of every other term is equal to a sum of the other every other terms with opposite signs (the second filter factor is composed of the ratios of 1,0, -9,16,-9,0,1 and see figs 5, 7 and col.5 lines 1-32). It meets the limitations of 1, 7, 12 and 14.

Applicant argued that the combination of Myers (US PAT. 4,817,149) in view of Wilkinson (JP 06-326555) combination is not proper (see remarks, page 7, third paragraph).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the examiner

Art Unit: 2644

believes that Myers and Wilkerson both involve a digital filter. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wilkinson into Myers to provide a half-band filter in respective low and high-band passing parts, placing the filters in an opposite stage and supplying the required symmetry.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Craven(US PAT. 6,760,451) and Rhee (US PAT. 5,805,715) are recited to show other related the sound quality adjusting device and filter device used therefor, sound quality adjusting method, and filter designing method.

10. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(703) 872-9306

Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's


Art Unit: 2644

supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See
Patent Examiner
US Patent and Trademark Office
Knox

571-272-7501
Date 11-18-2005 L.S.


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
11/28/05